

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**



(19)

(11) Publication number: **02148577 A**

Generated Document.

**PATENT ABSTRACTS OF JAPAN**(21) Application number: **63299843**(51) Intl. Cl.: **H01M 10/40 H01M 10/04**(22) Application date: **28.11.88**

(30) Priority:

(43) Date of application  
publication: **07.06.90**(84) Designated contracting  
states:(71) Applicant: **MATSUSHITA ELECTRIC IND CO  
LTD**(72) Inventor: **NISHIKAWA YUKIO  
MORITA TERUYOSHI  
ITO ZENICHIRO  
YAMAURA JUNICHI**

(74) Representative:

**(54) NONAQUEOUS  
ELECTROLYTE STORAGE  
BATTERY**

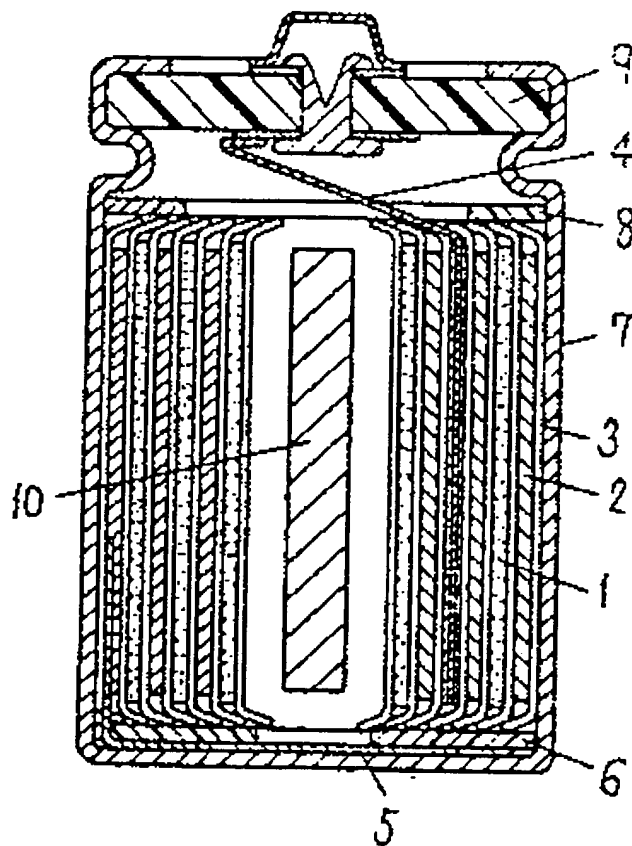
(57) Abstract:

**PURPOSE:** To suppress fusion and a calorific effect of metallic lithium by providing an electrode for which a separator that is wider than both plates is put between them, and by inserting a solid paraffine of melting point not less than 90°C and not more than 170°C into a core of the electrode.

**CONSTITUTION:** A separator 3 that is wider than positive and negative plates 1, 2 is provided between them, and the whole body wound in vortex, an electrode is formed. A lower insulating plate 6 is installed in the electrode, which is inserted in a case 7, and after an upper insulating ring 8 is installed therein, an electrolyte is poured. A solid paraffine 10 is inserted into a core of the electrode so as to build up a battery with a sealing plate 9 installed and sealed. When the melting point for paraffine and a resin is lower than 90°C, after charge and

discharge by 50 cycle and being retained at 60°C, internal impedance is drastically increased. When the melting point is greater than 170°C, as the internal temperature exceeds the melting point of lithium, the number of ignition is increased after charge and discharge by 50 cycle under the same condition as mentioned above. The solid paraffine of melting point not less than 90°C and not more than 170°C is thus to be inserted.

COPYRIGHT: (C)1990,JPO&Japio





# Derwent Data Available on Delphion

[Click Here](#)

[Log Out](#)
[Order Form](#)
[Work Files](#)
[View Cart](#)

[ABOUT DELPHION](#)
[PRODUCTS](#)
[NEWS / EVENTS](#)
[MY ACCOUNT](#)
[IP SEARCH](#)
[HELP](#)

[Browse Codes](#)
[IP Listings](#)
[Prior Art](#)
[Derwent](#)
[Advanced](#)
[Boolean](#)
[Quick Number](#)

The Delphion  
Integrated  
View

Other Views:  
[INPADOC](#)

Title: **JP2148577A2: NONAQUEOUS ELECTROLYTE STORAGE BATTERY**  
 ▶ Want to see a more descriptive title highlighting what's new about this invention?

Country: **JP** Japan  
 Kind: **A**

Inventor(s): **NISHIKAWA YUKIO  
 MORITA TERUYOSHI  
 ITO ZENICHIRO  
 YAMAURA JUNICHI**

Applicant/Assignee: **MATSUSHITA ELECTRIC IND CO LTD**  
[News, Profiles, Stocks and More about this company](#)



Issued/Filed Dates: **June 7, 1990 / Nov. 28, 1988**

Application Number: **JP1988000299843**

IPC Class: **H01M 10/40; H01M 10/04;**

Priority Number(s): **Nov. 28, 1988 [JP1988000299843](#)**

Abstract:



**Purpose:** To suppress fusion and a calorific effect of metallic lithium by providing an electrode for which a separator that is wider than both plates is put between them, and by inserting a solid paraffine of melting point not less than 90°C and not more than 170°C into a core of the electrode.

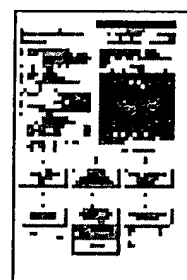
**Constitution:** A separator 3 that is wider than positive and negative plates 1, 2 is provided between them, and the whole body wound in vortex, an electrode is formed. A lower insulating plate 6 is installed in the electrode, which is inserted in a case 7, and after an upper insulating ring 8 is installed therein, an electrolyte is poured. A solid paraffine 10 is inserted into a core of the electrode so as to build up a battery with a sealing plate 9 installed and sealed. When the melting point for paraffine and a resin is lower than 90°C, after charge and discharge by 50 cycle and being retained at 60°C, internal impedance is drastically increased. When the melting point is greater than 170°C, as the internal temperature exceeds the melting point of lithium, the number of ignition is increased after charge and discharge by 50 cycle under the same condition as mentioned above. The solid paraffine of melting point not less than 90°C and not more than 170°C is thus to be inserted.

COPYRIGHT: (C)1990,JPO&Japio

▶ See a clear and precise summary of the whole patent, in understandable terms.

Family: [Show known family members](#)

Other Abstract Info: **DERABS C90-220073 DERC90-220073**



[View Image](#)

1 page

Foreign References: No patents reference this one

---



Nominate this  
for the Gallery...

---

[Subscribe](#) | [Privacy Policy](#) | [Terms & Conditions](#) | [FAQ](#) | [Site Map](#) | [Help](#) | [Contact Us](#)

© 1997 - 2002 Delphion Inc.